**Classroom Debate Activity**

**Physics (SPH3U)**

**Specific Expectation:**

D1.2 Assess, on the basis of research, how technologies related to nuclear, thermal, or geothermal energy affect society and the environment (e.g., thermal regulating units, radiopharmaceuticals, dry-steam power plants, ground-source heat pumps).

**Topic for the debate:**

“Should the nuclear energy be expanded, if justified?”

**Organize the teams**:

* The class is divided into 3 groups: the affirmative team, the opposing team, and the third judging team.
* The affirmative and opposing teams will consist of three to four members each, while the judging team will include the teacher, with a small group of students.
* Members not involved in the formal debate will make the audience.
* The teacher will allocate 2 students – one as a timekeeper and the other as a moderator.

**Instructions to the students:**

Topic will be given to the students 2 days in advance which will allow them to do the research work and prepare their arguments. The task may be divided between the group members. Students must find different sources of supporting information for your topic. During the debate, students may use diagrams, slides, videos etc. They should anticipate counter arguments and prepare rebuttals. Their views should be supported with reliable facts. The rules for the debate are to be followed at all times, otherwise the participants will be disqualified.

**Prepare room for debate**:

The room should be arranged so that the positioning of the teams and the audience is proper and the affirmative and opposing teams should be facing each other.

**During the debate**:

* Set the rules of the debate, including timelines.
* Students will be informed about how they will be assessed through the assessment rubric.
* Begin the debate with the affirmative team speaking first. Allow them 5-7 minutes.
* Repeat the same for the opposing team.
* Give both sides about 5 minutes to prepare for their rebuttal.
* Teacher should intervene in case of requirement.

**Note: The teacher should give positive feedback to the students involved in debate**.

**Deciding the Winner:**

The winner team will be judged by the teacher and the peers involved in judgment through the guidelines mentioned in the assessment rubric.

**Assessment Rubric**:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Category | Level 4 | Level 3 | Level 2 | Level 1 |
| Knowledge and understanding of the topic and its content | Demonstrates knowledge and understanding of the topic with a high degree of effectiveness | Demonstrates knowledge and understanding of the topic with a considerable degree of effectiveness | Demonstrates knowledge and understanding of the topic with some effectiveness | Demonstrates knowledge and understanding of the topic with limited effectiveness |
| Communication  Delivery and clarity of ideas | Conveys ideas logically, clearly and convincingly, with a high degree of effectiveness | Conveys ideas logically, clearly and convincingly, with a considerable degree of effectiveness | Conveys ideas logically, clearly and convincingly, with some effectiveness | Conveys ideas logically, clearly and convincingly, with limited effectiveness |
| Inquiry/investigation  Producing evidence and rebuttaling  (challenge to opponents and response to questions) | Contributes substantially and meaningfully to support the arguments.  Substantial and meaningful preparation for opponents’ points and rebuttals | Contributes meaningfully to support the arguments.  Considerable preparation for opponents’ points and rebuttals | Contributes in some way to support the arguments.  Some preparation for opponents’ points and rebuttals | Contributes in a limited way to support the arguments.  Limited preparation for opponents’ points and rebuttals |
| Application  Making connections of science and technology to environment and its constituents | Applies knowledge to STSE with a high degree of effectiveness | Applies knowledge to STSE with a considerable degree of effectiveness | Applies knowledge to STSE with some effectiveness | Applies knowledge to STSE with  limited effectiveness |